Self-Organizing Knowledge

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1. Introduction

Senior manager: *"We put the people who are part of the networks back in control. Regional and nationwide networks of professionals. Less or even no centrally organized agenda's. It became much more about letting people just share and talk about what they think is relevant, ask about what they need, and only organize an "expertise day" for the organization once a year. […]*

And that self-organizing has a lot of pro's and con's. Well, now we have networks that are really flourishing! … But we also have those that seem to resemble the Sahara…haha!"

Therapist: *"You really need those gatherings to share and learn from each other. […] And to have discussions that others can learn from. So for the speech therapists, what they constantly do is exchanging experiences about how they treated their clients. Like: "I'm facing these clients with these conditions, how do you treat that?" And they learn so much from each other."*

1.1. Knowledge sharing & integration in organizations

This dissertation expands our understanding of the conditions under which professionals[1] share, create, recombine, reuse, and integrate knowledge through interactions with others (Jarvenpaa & Majchrzak, 2010; 2008; Faraj et al., 2011). I focus on the ways in which professionals can share knowledge by exchanging and learning from others' experiences, and how they can integrate knowledge by building on each other's experiences to create new knowledge (Agterberg et al., 2010). The quote above, from the therapist, comes from my data and illustrates that professionals can learn from each other by sharing experiences from their situated practice. By talking to others about what they do in certain situations, they can build on those experiences to expand their own knowledge. The quote from the manager on the other hand illustrates the intricacies regarding the extent to which knowledge in organizations can be managed. Whereas the more traditional, objectivist approach to knowledge management has been to facilitate, stimulate, or bluntly push workers to adopt new technologies and routines to increase knowledge sharing for organizational gains (Hislop, 2002; Huysman & de Wit, 2004; Scarbrough & Swan, 2001), the social-practice based approach takes into account that knowledge is inherently entangled with practice, and the context in which that practice takes place. Practices such as repairing complex technologies (Orr, 1996), or providing medical care (Tagliaventi & Mattarelli, 2006) often do not take place in isolation as actors have a network of peers with whom they work, interact, and share experiences.

Traditionally, organizations engage in knowledge sharing and integration initiatives to improve coordination, collaboration, efficiency of interaction, and enhance the innovative capabilities of an organization (Grant, 1996). However, the vast literature on knowledge sharing and integration (e.g., Easterby-Smith et al., 2000; Van den Hooff & Huysman, 2009; Swan et al., 1999; Alavi & Leidner, 2001; Brown & Duguid, 2000; Huysman & Wulf, 2005; Erkelens et al., 2015) shows that 'managing knowledge' in organizations remains an elusive ideal. Managers attempt to facilitate knowledge sharing through various means such as introducing sophisticated information systems where people can "store" their knowledge, or they try to facilitate inter-project learning by having people document their "lessons-learned"

[1] The term professionals is used in this dissertation to refer to generally highly-educated employees who engage in knowledge intensive work that requires expertise, experience, and abstract knowledge.

or "best practices". Unfortunately, these approaches often forego the inherent tacit and practice based dimensions of knowledge (Duguid, 2005; Swan et al., 1999): such approaches conceive of knowledge as something tangible rather than as something that is embedded in practice and therefore cannot be explicated and stored. Trying to actively manage knowledge that is inherently embedded in practice is therefore highly complex and often problematic (Hislop, 2002; Schultze & Stabell, 2004).

1.1.1. Knowledge sharing & integration in communities and networks of practice

The knowing that is entwined with practice *can* be shared in so-called communities and networks of practice (Brown & Duguid, 1991; Lave & Wenger, 1991; Brown & Duguid, 2001): these are collectives of professionals who are engaged in a common practice and regularly interact with each other. Such collectives provide individuals a space to engage in discussions, share local problems, and learn from each other (Brown & Duguid, 1999; Brown & Duguid, 2001).

Consider for example a group of doctors who are interacting with each other regularly, during work, for example on how to position patients in different ways for better examination in imaging machines (Tagliaventi & Mattarelli, 2006). A classic example is provided by Orr (1996), who shows that printer repair technicians depend on each other's experiences to conduct their work: the formal procedures provided by the organization only accommodate for typical situations but more often than not the technicians have to cope with novel situations as they encounter printers with problems for which the procedures provide no solution. In such situations, the technicians depend on each other: by building on the experiences of others, technicians are able to make sense of their own situation and are able to provide a solution, outside of the solutions provided by the procedures. When professionals with a shared interest come together, knowledge sharing *does* happen, but it is not a deliberate or conscious process. They interact and come together because they have a common practice and feel that they are part of the collective of printer repair technicians. "War stories" about complex problems are exchanged and over time the people who are part of such a group develop a collective knowledge base of experiences that others can apply in their own local practice. Such collectives do not necessarily need to be tight-knit groups of employees, as they can also be collectives of actors who only interact occasionally. As Nonaka

(1994: 15) explains, these groups or collectives of professionals within organizations *"contribute to the amplification and development of new knowledge. While these communities might span departmental or indeed organizational boundaries, the point to note is that they define a further dimension to organizational knowledge creation, which is associated with the extent of social interaction between individuals that share and develop knowledge."*

1.2. Self-organizing for knowledge

The discussion above shows that for knowledge sharing and integration to happen, actors need to be able to interact with each other freely. Hence, building on the discussion above, I argue that it is more fruitful to talk about "self-organizing for knowledge" because it focuses our attention on the ways in which professionals in organizations engage in knowledge sharing and integration through their own efforts. It emphasizes that it is not something that organizations can actively manage but rather something that managers must provide the right conditions for, to allow professionals to engage in knowledge sharing and integration. This dissertation draws on the social-practice based approach to knowledge to understand the conditions under which professionals are able to interact with each other, share problems from practice, and learn from others' experiences (Brown & Duguid, 2000; 2001; Tsai, 2001).

In an attempt to create the right conditions for self-organized knowledge sharing and integration, many organizations have for example introduced knowledge networks. *"Whether they choose to call them communities of interest, communities of practice, or knowledge networks, many firms have encouraged the formation of social groups within their organization to help stimulate knowledge flows."* (Davenport & Prusak, 1998; viii). However, as mentioned earlier, actively managing knowledge is a cumbersome process susceptible to over-management (Brown & Duguid, 2000; Van Aken & Weggeman, 2000). For example, Agterberg and colleagues (2010) discuss the intricacies of actively stimulating knowledge sharing among geographically dispersed employees in a development organization. The managers attempted to facilitate the connections among members and stimulate relevant content to be shared on an online discussion platform. Establishing social ties among members is necessary for knowledge sharing to happen, but Agterberg and colleagues (2010) also show that managerial interventions aimed at increasing social ties can be counterproductive when employees feel that the connections are forced, or when they feel

that such managerial intentions are not genuine. Likewise, managerial interventions to stimulate content to be relevant to the organizations can be counterproductive when the relevance for local application (e.g., departments) disappears (Agterberg et al., 2010). Similarly, Thompson's (2005) study at a large global IT hardware and services organization shows that knowledge sharing among professionals can be both positively and negatively affected by different types of organizational interventions. Thompson (2005) argues, among others, that providing time may facilitate knowledge sharing, while forcing people to come up with best practices may frustrate knowledge sharing.

1.2.1. Knowledge sharing & integration with enterprise social media

Another, more recent, way in which organizations are attempting to create the right conditions for self-organized knowledge sharing and integration is by introducing so-called enterprise social media (ESM). These technologies are designed to support knowledge sharing and integration by making it easier for professionals to get in contact with others, share experiences, and engage in (online) collaborative projects (Leonardi & Vaast, 2017). In other words, these technologies may provide the right conditions for actors to get in contact and share knowledge with others with a common practice. Examples of ESM are Facebook Workplace[2], Yammer[3], or Slack[4]. These technologies provide employees the ability to connect with others and engage in private or public (group) discussions (Leonardi et al., 2013; Leonardi & Vaast, 2017). Both Gartner (Van der Meulen & Rivera, 2013) and McKinsey (Harrysson et al., 2016) have indicated that ESM have the potential to improve efficiency of communication, enhance collaboration, and increase innovativeness by facilitating knowledge sharing and integration throughout the organization. Especially since work in organizations is becoming more geographically dispersed, technologies that allow employees to collaborate and exchange ideas and experiences on a digital technology must be taken into consideration when studying knowledge in organizations. Existing research has discussed both pros and cons of the use of ESM in organizations (Leonardi & Vaast, 2017). ESM allow employees to increase their knowledge of who-knows-whom and who-knows-what to more

[2] https://www.facebook.com/workplace

[3] https://www.yammer.com

[4] https://www.slack.com

easily locate relevant expertise (e.g., Leonardi, 2014), and also provide an online workspace for employees to collaborate with geographically dispersed peers (Leonardi et al., 2013; Mäntymäki & Riemer, 2016). On the other hand, the openness of ESM makes people selective in what they do or do not express (Gibbs et al., 2013) and can become biased by the opinions of popular users (Majchrzak et al., 2013; Leonardi et al., 2013).

1.3. Research question

The discussion above illustrates that organizations tried different ways to facilitate knowledge sharing and integration, for example by introducing knowledge networks, as well as technologies that can facilitate knowledge sharing and integration in those networks, with varying levels of success. Existing research has often addressed knowledge management initiatives from a managerial perspective, by for example studying how managers can successfully influence knowledge sharing in networks of practice (Agterberg et al., 2010; Soekijad et al., 2011). Agterberg's dissertation (2012: 22) expanded on this topic by explaining that managing knowledge sharing in networks requires "walking a tight rope": managing too little will fail to get knowledge sharing initiatives to take off, while managing too much will damage and unnecessarily constrict employees' knowledge sharing activities. Whereas Agterberg's research has focused on managing knowledge sharing in networks of practice from the perspective of managers, project leaders, and core members, in this dissertation I aim to extend this stream of research by focusing on the role of the employees themselves. More specifically, by focusing on the experiences, motivations, and knowledge sharing and integration activities of employees we can expand our understanding of the conditions under which self-organized knowledge sharing and integration flourishes, and how ESM can be used in those processes. Hence, the research question that guides this doctoral dissertation is as follows:

Under what conditions do professionals engage in self-organized knowledge sharing and integration, and how can ESM facilitate these processes?

To answer this question, I conducted three empirical studies in two different organizations. First, I study how an infrastructure of communities, networks, and resources within an

organization provides conditions for practice-based knowledge to be shared and integrated into the organization. Second, I study the conditions under which ESM can become emergently adopted into the daily work of professionals so that they use the technology in their knowledge intensive work. Third, and last, I analyze under what conditions managerial attempts to implement ESM may frustrate knowledge sharing and integration.

With the findings presented in this doctoral dissertation I aim to expand our understanding about how knowledge that is inherently embedded in the practices of professionals can be shared and integrated in a meaningful way with other professionals throughout an organization, to bring to life an organization where continuous learning and innovating in practice is the modus operandi (Weggeman, 1996). In the empirical studies (Chapter 2, 3, and 4), I analyze how professionals in practice engage in knowledge sharing and integration, and how they use ESM for knowledge sharing purposes. Throughout the empirical studies I adopt a social-practice perspective (Brown & Duguid, 2001): I focus on what it is that people *do* in their work that leads to knowledge sharing and integration. By conducting a longitudinal study at a specialized healthcare organization and at an IT-consultancy organization, I unravel how professionals validate the knowledge they develop in their practice; I analyze how ESM can become adopted into the work of the professionals and becomes used for knowledge sharing and integration; and I study how the introduction of ESM yields counterproductive behavior when there is a misalignment between the ideas and intentions of managers versus those of the professionals who are pressured to use the technology. Together, these studies provide an answer to the research question by discussing the conditions under which professionals engage in knowledge sharing and integration, and how ESM can facilitate these processes.

1.4. Research approach

Because knowledge sharing and integration happen over time, through practice (e.g., when working together) and work-related discussions (e.g., when solving problems), a longitudinal qualitative approach is most suitable as it directs our attention towards the activities and experiences of the professionals (Langley, 1999; Edmondson & McManus, 2007). By conducting qualitative research it is possible to develop a thorough understanding of how actors interact, share knowledge, learn new practices or skills, and understand under what

conditions those activities do or do not occur. Such an approach does require a more thorough understanding of the actual work of the actors (Bailey & Leonardi, 2015). Being able to 'get' what the actors are doing provides valuable insight and nuances that allow me to draw more substantiated conclusions.

Note that throughout this dissertation I make the distinction between professionals and managers. This is not a distinction meant to imply that managers are not professionals, it is merely to make the distinction between those who conduct specialized knowledge work that requires specialized training, knowledge, and expertise, and those who have management positions. While these may at times overlap, the distinction is suitable for analytical purposes to explain why the actions from professionals might misalign with actions of managers.

The following section will discuss the two organizations and why they are appropriate for this doctoral research. The section after that will discuss in more detail what data was collected and how the different data were necessary for answering the research question.

1.4.1. Cases

I collected data at two organizations: CareInstitute and ItCon. These organizations were chosen for this research because they both employ highly skilled professionals who work in an environment where knowledge is transient, so knowledge sharing and integration is an important part of their work. CareInstitute is particularly relevant for understanding the conditions that facilitate self-organized knowledge sharing and integration among dispersed professionals. Also, at CareInstitute I was able to follow the emergence of an ESM platform. ItCon, on the other hand, is particularly relevant because management decided to actively implement an ESM. By drawing on these two cases I am able to draw conclusions on the conditions that facilitate and frustrate knowledge sharing and integration.

CareInstitute.

CareInstitute is a specialized healthcare organization located in the Netherlands, with over 4500 professionals who work in over 70 different locations across the Netherlands. CareInstitute provides care predominantly for children and adolescents who face multiple communication related challenges at the same time. The clients can for example be blind, and

hard-of-hearing, and also face mental challenges. Because of the complexity of the clients, the professionals need to interact with a variety of disciplines to be able to diagnose and treat their clients. The professionals have a variety of specializations such as speech therapy, speech language specialists, linguists, sign-language teachers, ambulatory supervisors, social workers, behavioral therapists, psychologists, and researchers (often with doctorates). For the readability of this dissertation I refer to all these different professionals as "therapists" because they are all involved with providing therapy for the clients of CareInstitute.

To provide proper care, the therapists often depend on each other to ask for input, make sense of complex challenges, and discuss new developments in their field (e.g., new methodologies). CareInstitute is a particularly relevant case for this dissertation research because the therapists have to interact with each other on a regular basis and also continuously learn both in practice and from new outside developments. Knowledge sharing and integration is at the core of what the therapists do on a daily basis. Hence, to understand the conditions necessary for knowledge sharing and integration to take place, CareInstitute provided material for the first empirical study (Chapter 2).

Moreover, CareInstitute also provided relevant data for the second empirical study (Chapter 3). Several therapists started to use an ESM platform voluntarily in 2011 and by the time I entered the organization in 2014, the technology incrementally became used by more therapists for more diverse activities. The case provided fruitful empirical material to understand the conditions that are necessary for professionals to use an ESM for knowledge sharing and integration.

ItCon.

ItCon is a multinational IT consultancy organization active in over 40 countries, with over 70.000 employees, that provides IT related services to organizations all over the world. Examples of the services they provide are IT strategy consultancy, advice on and implementation of enterprise resource planning systems, or developing IT solutions for large events. The professionals at ItCon are specialized in fields such as IT strategy, programming, cloud computing, server architecture, and many other IT related disciplines. Oftentimes, ItCon has a (temporary) service-contract with an organization to provide certain IT services, and this means that the professionals employed by ItCon work at different locations for

different projects. The professionals build their skills during their education, but most knowledge is learned on the job as the professionals continuously develop their expertise both by learning formally through trainings and from discussing developments and experiences with their peers. Because the IT professionals often work at different locations, they are used to interact with each other electronically through email, VOIP services, cloud storage services, and any other technology that allows them to interact and collaborate with other professionals.

Management decided to develop and introduce an ESM platform with the aim of increasing efficiency of communication, enhance innovation, improve collaboration, and in general facilitate knowledge sharing. The actual technology was designed to allow the professionals to exchange files, collaborate on documents, and engage in discussions in different groups related to different disciplines. For this doctoral research, ItCon is a particularly relevant case because I was able to follow developments over time and could study both the introduction and actual use of the technology. Especially since the technology was not yet introduced organization-wide at the time that I entered the organization, I was able to follow developments over time and understand the different types of usage by both novice and experienced users. Contrasting to the CareInstitute study, the study at ItCon proved highly informative to understand some of the conditions that seem to frustrate knowledge sharing when ESM are introduced by managerial intervention.

1.4.2. Research methods

The first study (reported in Chapter 2) focuses on the ways in which professionals engage in knowledge sharing and integration through communities and networks of practice, and reports on the conditions that make such knowledge sharing and integration possible. I conducted 33 interviews with therapists, managers, staff, teachers, and also interviewed several former employees. The interviews were conducted between the winter of 2014 and the winter of 2016. I also attended several meetings where therapists would come together to discuss work, potential challenges, and new developments within their field of work. Attending such meetings allowed me to create a much better understanding of what it means to work at CareInstitute and helped me understand why it is so important for therapists to continuously discuss developments with their peers. Next to attending the meetings, I was

also able to collect over 70 documents such as minutes, protocols, research papers, and policy-related documentation. I for example analyzed documents that explained how therapists could apply for research funding when they had potential relevant ideas about methodologies. These documents provided valuable input not only to locate potential relevant informants, but also to improve my understanding of what working at CareInstitute means for the therapists, and how the organization is facilitating or frustrating knowledge sharing and integration.

For the second study (Chapter 3), to understand how an ESM platform such as Yammer can be introduced and sustained successfully, I collected data from Yammer from between 2011 and 2016. With permission of the organization and after approval of Research Ethics Review Board of the Faculty of Economics and Business Administration, I was able to collect a large amount of data from Yammer. Together with a research assistant, I coded thousands of threads that were posted on Yammer, and this allowed me to create a detailed account of how Yammer was initially used in 2011, and how it was used in 2016 when therapists had integrated it into their work.

Because my data collection at CareInstitute focused on both the first and the second empirical study, many parts of the data overlapped and were relevant for both studies. For example, when I interviewed therapists the first half of the interview would focus on the work of the therapists, how they learned and 'updated' their skillset, and how they coped with difficult challenges. The second half would often continue to focus more on the role of Yammer, and how they used it during their work. Hence, the methodology of Chapter 2 and 3 may some overlap in the manuscripts for the two studies conducted at CareInstitute.

For the third study, I collected data at ItCon from between February until June 2013. I followed a purposeful sampling approach (Patton, 1990) to be able to receive input from a wide variety of actors. I conducted 20 interviews with professionals from different hierarchical levels, with a variety of tenures, and with various levels of experience with the technology. I developed different interview protocols for the different types of actors. For example, when I interviewed someone responsible for the introduction of the technology (i.e., "champions") I asked about the ways in which they aimed to convince others, how and why they became champions, and what they saw as benefits or constraints of the technology. Interviewing the different professionals allowed me to understand not only how the technology was used by different IT professionals, but also why and how it was introduced

and managed. To understand more about the role of management in the introduction of the technology, I also collected documentation developed by management about the formal development and implementation strategy of the technology. And to understand how the technology was actually used in practice, I also collected log files of discussions that happened "on" the technology (as they happen "on" Facebook for example).

During the data collection I moved back and forth between data and theory, and my ongoing interpretation guided my subsequent data collection. During data collection at ItCon I started to understand that there were also several institutional conditions that affected the perception and enactment of ESM. To better understand these conditions I also used data collected during a previous study conducted between February and June of 2012. The data from this previous research was collected when the technology was not yet introduced, and therefore provided valuable information about how the professionals did their work (e.g., what technologies they used for communication) and what their intentions and attitudes were regarding the new technology. By contrasting the experiences and intentions of the users with the experiences and intentions of the champions and managers, I was able to understand why the ESM platform was eventually enacted in several strategic ways.

1.5. Dissertation outline

To understand the conditions under which professionals are able to share and integrate knowledge, and how ESM support these processes, I focus on four interrelated core conditions for knowledge sharing and integration: the relational, the sociotechnical, the organizational, and the institutional conditions. Knowledge sharing and integration happens within the context of: social-practice based interactions (relational conditions); a potential ESM platform that affords and constraints certain knowledge sharing activities (sociotechnical conditions); an organizational context that permits or restricts opportunities to engage in knowledge sharing (organizational conditions); and industry or even societal level norms, values, and structures that inform the knowledge sharing behavior of actors (institutional conditions). Because these conditions are highly interrelated, the three empirical studies each focus on several of the aforementioned conditions.

In the first empirical study (*Chapter 2*) I focused on the relational and organizational conditions. I studied the role of communities and networks of practice where knowledge can

Table 1.1 – Dissertation outline and outcomes

Chapter:	*Purpose:*	*Related publication(s):*	*Co-author(s)*
1. Introduction	Chapter 1 introduces the importance of knowledge sharing and integration in organizations, and specifies the research question: under what conditions do professionals engage in self-organized knowledge sharing and integration, and how can ESM facilitate these processes?	-	-
2. *Putting it to the Test:* Knowing Through a Process of Validation.	Chapter 2 addresses the conditions under which the experiences of individuals can be translated into organizational knowledge through an infrastructure of communities, networks, and slack resources.	Chapter 2 is currently being revised for submission to *Organization Science*. An earlier version of this chapter has been peer-reviewed and accepted for but *not* presented at *Academy of Management Conference 2017* in Atlanta, and was peer-reviewed, accepted for and presented at the pre-conference workshop at the *Process Organization Studies Conference* in June 2016.	Prof. dr. Paul Leonardi, and Prof. dr. Marleen Huysman.
3. *Taming Technology:* Domesticating Enterprise Social media in Practice	Chapter 3 focuses on the conditions under which an ESM platform can become embedded into the daily work of professionals to the extent that they use if for knowledge sharing and integration.	An earlier version of Chapter 3 has been peer-reviewed, accepted, and presented at *Process Research Organization Studies* conference in June 2017. Other earlier versions were reviewed, accepted, and presented at conference of the *European Group of Organization* Studies, July 2015, and the conference on *Organizational Learning and Knowledge Capabilities*, in April 2015, and	Prof. dr. Marleen Huysman, and Prof. dr. Bart van den Hooff.
4. *Knowledge Sharing on Enterprise Social Media*: Practices to Cope with Institutional Complexity	Chapter 4 addresses the conditions under which the affordances of an ESM platform are enacted in ways that both facilitate and frustrate knowledge sharing and integration.	Chapter 4 was published in *Journal of Computer-mediated Communication,* on February 29th 2016 (DOI: 10.1111/jcc4.12153). An earlier version was accepted for and presented at the conference for the *European Group of Organization studies*, July 2014, and was accepted for and presented at the *International Communication Association* conference, May 2014.	Dr. Marlous Agterberg, and Prof. dr. Marleen Huysman
5. Discussion & Conclusion	Chapter 5 integrates the findings from the different empirical studies and addresses the main research question by discussing the different conditions under which professionals do or do not engage in knowledge sharing and integration.	-	-

be discussed and developed. Existing research has highlighted the importance of both communities and networks of practice within organizations as spaces where professionals can connect and share knowledge (Brown & Duguid, 1999; Erkelens et al., 2015; Pyrko et al., 2017). It is interesting to extend our understanding of knowledge sharing and integration in organizations if we look at the ways in which new knowledge, that is entangled with and emerges in practice, becomes adopted throughout an organization.

To address this phenomenon, I studied the ways in which therapists at CareInstitute exchange experiences, learn from others, and collectively share and integrate knowledge. With an infrastructure of communities, networks, and slack resources CareInstitute supports the interaction among therapists, and facilitates that new ideas that emerge in practice can go through what I identify as a process of validation that consists of two sub-processes: experiential and evidential validation. Because individuals and their peers within a community learn by building upon their shared practice and experiences, new methodologies become accepted within a community through experiential validation. Because members of NOPs cannot draw from the same situated practice, more evidence is needed before members of a NOP accept a new methodology. Hence, new methodologies become accepted in NOPs through a process of evidential validation. When an idea for a treatment goes through both processes successfully, it becomes 'accepted' by the therapists and the organization as a new valid treatment. The first empirical paper discusses the conditions that are necessary for practice-based knowledge to be discussed, shared, and re-developed through and across communities and networks of professionals, and how through those processes practice-based knowledge can become integrated into the organization.

The second study (*Chapter 3*) focused mostly on the sociotechnical and relational conditions that provide fruitful grounds for ESM to emerge and become domesticated in practice. The literature on ESM has discussed the various ways that these technologies afford knowledge sharing (e.g., Leonardi et al., 2013; Leonardi & Vaast, 2017). However, these studies have most often looked at the introduction and use of technologies that were introduced from the top down, by management. Because ESM are increasingly introduced bottom up, by employees (Colbert et al., 2016; Aral et al., 2013), I theorized that there are different conditions that support the adoption of such a technology. I considered the adoption and use of ESM to happen through a process of domestication (Faraj et al., 2016).

To understand the conditions under which ESM become adopted into the daily work

of therapists, I conducted a second study at CareInstitute. Over time, this study shows that an ESM platform (i.e., Yammer) becomes integrated into the daily work of the therapists as it affords them the ability find, share, and integrate knowledge throughout the organization: they use the technology to locate relevant expertise, share and discuss complex client cases and new methodologies, and engage their community of committed professionals. This second empirical study highlights the importance of several relational and sociotechnical conditions that together assure the domestication of an ESM platform that facilitates knowledge sharing and integration throughout the organization.

The third empirical study (*Chapter 4)* will focus mostly on the institutional, organizational, and sociotechnical conditions. The literature has discussed that technologies 'have' certain affordances (Gibson, 1986) that represent action possibilities that depend on the interrelation of material features and actor intentions. When we consider the use of ESM, scholars have discussed that these technologies have certain affordances for knowledge sharing (Treem & Leonardi, 2012; Leonardi & Vaast, 2017). At the same time however, we also know that the behavior of actors is informed by various institutional logics (Thornton et al., 2012; Friedland & Alford, 1999). In this third study I propose that to understand the extent to which ESM can actually facilitate knowledge sharing and integration, we need to consider the institutional influences on the ways that affordances are enacted (Seidel & Berente, 2013). To do so, I studied the implementation of an ESM platform at ItCon where management had decided to introduce the technology to promote collaboration, innovation, and overall efficiency of communication. At first, the professionals felt inclined to adhere to a profession logic that informed them to appropriate the technology in a way that would allow them to exchange knowledge with other professionals. Management however, imposed a corporate logic during the implementation of the technology, and as a result the professionals ended up only using the technology for strategic reasons: connecting mostly with the strategically "right" people, discussing only non-sensitive topics, and attending only to management-related information. This third study thereby shows how different institutional conditions affect how actors enact ESM.

The fifth chapter will provide implications for research in the field of knowledge in organizations. Chapter 2, 3, and 4 can be read independently as they present different papers that were written in collaboration with several co-authors as presented in Table 1.1.

1.6. Theoretical relevance

By drawing on three different studies in which I apply different theoretical frameworks and methodologies, there are three overarching contributions to the literature.

First and foremost, this dissertation contributes to the literature on the practice-based perspective on knowledge in organizations. The findings from this dissertation address the different conditions under which professionals are willing and able to engage in self-organized knowledge sharing and integration. Social-practice based perspectives have already shown that for knowledge to be shared and integrated, interactions need to take place regularly during the common practice (e.g., when doctors and nurses interact over positioning patients) (Brown & Duguid, 1991; Brown & Duguid, 2001; Tagliaventi & Mattarelli, 2006; Pyrko et al., 2017). The findings from this dissertation extend the aforementioned existing line of research by focusing on the different conditions that make it possible for an infrastructure (i.e., both social and material) to emerge that professionals can use to engage in knowledge sharing and integration. Future research may draw from the findings of this dissertation to study the extent to which these conditions are applicable in different professions, industries, or institutional fields.

Second, my dissertation adds to the literature on technologies in organizations by describing the conditions under which affordances of ESM are enacted in ways that either facilitate or frustrate knowledge sharing and integration. How a technology is used in practice depends both on the material features and the intentions of actors (Faraj & Azad, 2012). Recent conceptual work has discussed that the ways in which affordances are enacted in practice might also depend on the institutional logics that inform actors' behaviors (Seidel & Berente, 2013). The findings of this dissertation add to this emerging stream of literature by studying and analyzing the ways in which different institutional logics influence how actors enact the affordances of ESM. The findings of this dissertation may help scholars to better understand that while a particular technology may provide the material means for knowledge sharing and integration, the institutional conditions affect the ways in which ESM may actually be used for those processes.

Third, this dissertation adds another contribution to the literature on technologies in organizations. The findings of this dissertation address the conditions under which ESM can become embedded into the daily practices of professionals. Literature on the use of ESM has

discussed the ways in which these technologies may facilitate (e.g., Treem & Leonardi, 2012; Leonardi & Vaast, 2017) or frustrate knowledge sharing and integration (e.g., Gibbs et al., 2013; Majchrzak et al., 2013; Leonardi et al., 2013). By studying and analyzing the conditions necessary for such a technology to become domesticated, scholars can better understand *why* ESM can become part of employees' daily work through an emergent process.

Based on the insights derived from the separate empirical studies discussed in Chapters 2, 3, and 4, Chapter 5 will provide a more detailed discussion on the overall contribution of this dissertation by discussing the different conditions under which professionals engage in self-organized knowledge sharing and integration.

1.7. Practical relevance

An important focus of this doctoral research is to understand the ways in which organizations attempt, succeed, and fail, in providing the right conditions for self-organized knowledge sharing and integration. Below I briefly describe several key takeaways that may inform managerial decision-making.

The study from Chapter 2 focuses on the conditions under which knowledge that is inherently entangled with practice (i.e., experience) can become organizational knowledge. Through a process of experiential validation ideas that emerge in practice are reflected on and collectively discussed in local communities to become knowledge on a community level. Then, to become organizational knowledge, the community knowledge has to go through evidential validation in which ideas are tested and developed formally. For organizations this study highlights the importance of slack resources: by providing professionals specific means to validate their ideas, professionals can either improve the current work, or can reinforce the trust in existing protocols. Professionals will continue to experiment in practice and create new knowledge locally, but without a complex composition of slack resources to form evidential validation, that knowledge cannot become organizational knowledge.

Chapter 3 reports on the necessary conditions for ESM to become integrated in the daily work of professionals (i.e., therapists). The study reports on the emergent domestication of a technology that supports knowledge integration throughout the organization, and shows that, over time, therapists are able to access, discuss, and connect with knowledge and expertise. For managers this study provides clear guidelines on how to support this process of

domestication and explains why it is (often) better to let professionals slowly decide what technologies they use in what specific ways.

Chapter 4 then discusses the conditions that influence the introduction of an ESM platform that is intended to facilitate knowledge sharing and integration turns out to frustrate knowledge sharing and integration. For organizations this particular study can be a valuable source of information on what forces are at play that influence both their own behavior and the behavior of the professionals they manage. Being cognizant of institutional conditions may help managers make better decisions.